

Amendment and Response under 37 C.F.R. 1.116

Applicant: Samuel C. Ramey et al.

Serial No.: 09/529,032

Filed: April 5, 2000

Docket No.: 57174US006

Title: MODULE HEADER APPARATUS

REMARKS

This Response replies to the Final Office Action mailed August 27, 2003, in which claims 1-29 were rejected. With this Response no claims are amended and arguments distinguishing the claimed invention from the prior art are presented. Claims 1-29 are presented for reconsideration and allowance. Claims 30-38 were previously withdrawn from the application as being drawn to a non-elected species.

Claim Rejections under 35 U.S.C. § 103

Claims 1-5, 9, 12-14, 18-21, 24, 25 and 28-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over McHugh et al. (U.S. Patent No. 5,286,207) in view of Komatsu et al. (U.S. Patent No. 5,139,435).

Independent claim 1 claims a header connector apparatus configured to receive an electronic card. The apparatus comprises a body having first and second spaced apart side arms formed integrally with the body. The first and second side arms are configured to receive the card therebetween. The first side arm has a longitudinally extending first dovetail member. An actuator button has a longitudinally extending second dovetail member configured to mate with the first dovetail member to allow the button to move longitudinally relative to the body. A monolithic ejector mechanism is coupled to the body and the button. The monolithic ejector mechanism is configured to eject the card from the body upon longitudinal movement of the button relative to the body.

Independent claim 14 claims a header connector apparatus configured to receive an electronic card. The apparatus comprises a body having first and second spaced apart side arms configured to receive the card therebetween, the body being formed to include an opening adjacent the second arm. A button is coupled to the first arm. The button is configured to move relative to the first arm. The button is formed to include a notch portion. The apparatus further comprises a monolithic ejector mechanism having first and second opposite flanges. The first flange is located in the notch portion of the button to couple the ejector mechanism to the button. The second flange extends through the opening formed in the body adjacent the second arm. The ejector mechanism also has a

pivot cam positioned between the first and second flanges, so that movement of the button causes the ejector mechanism to pivot about the pivot cam to eject the card.

Regarding independent claim 1, McHugh et al. is said to teach a connector with a body having first and second spaced apart side arms formed integrally with the body and configured to receive the card therebetween. McHugh et al. is further said to teach a side arm having a longitudinally extending member through the housing 12 (referring to Figure 1) that includes a tunnel-type member for accommodating actuator button 48. McHugh et al. is said to teach an actuator button 48/52/53/54 having a longitudinally extending member (referring to Figure 1 and Figure 2) to contact the first member (that is, the tunnel portion of housing 12) to allow the button to move longitudinally relative to the body. McHugh et al. is further said to teach an ejector mechanism coupled to the body and the button, the ejector mechanism being configured to eject the card from the body upon longitudinal movement of the button relative to the body, via the action of sliding plate 72 and lever 62. The Examiner further states that sliding plate 72 and lever 62 are understood to comprise a mechanism to facilitate ejection, and hence are understood to form an “ejection mechanism”, or an arrangement of parts for ejection purposes. The Examiner finds that although McHugh et al. teaches a tunnel member for accommodating the actuator button, and not a dovetailed member, and although McHugh et al. teaches an actuator button that connects with the tunnel member, as opposed to an actuator button with a dovetail member to engage the first dovetail member, such modification would have been obvious to one of ordinary skill of the art at the time the invention was made. The Examiner also finds that the claimed invention would perform equally well with the dovetail accepting and engaging members as with the tunnel and corresponding member of McHugh et al. Therefore, the Examiner states that it is an obvious matter of design variation, concluding that the tunnel member taught by McHugh et al. is functionally equivalent to the dovetail members of the claimed invention. In both cases fasteners are not required to couple the body to the button and both could be used to accommodate sliding members. The Examiner furthermore finds the use of dovetails are well known and conventional in the art, whether for interlocking means or for sliding means. Therefore, the Examiner concludes that simply adapting the teaching of McHugh et al. and

replacing its tunnel and engaging member with well known male/female dovetail members would have been known.

With regard to independent claim 14, McHugh et al. is further said to teach that the ejector includes a pivot configured to engage the body, so that movement of the button relative to the body causes the ejector mechanism to pivot about the pivot to eject the card (citing column 6, lines 47+ and claim 10 of McHugh et al.). The Examiner states that although McHugh et al. is silent as to a pivot cam, the pivoting means as taught by McHugh et al. are understood by the Examiner to meet the functional limitations of the pivot cam as taught by the current invention, as pivoting and cams are well known and conventional in the art. The Examiner states that lever 62 is interpreted to include a first flange (tip) 64 to engage the notch of the button for engagement (Figs. 5A-8), and a second flange on 72 that extends through the opening formed in the body adjacent the arm.

The Examiner further details how the limitations of dependent claims 2-5, 9, 12, 13, 18-21, 24, 25 and 28-29 are taught by McHugh et al.

McHugh et al. is acknowledged by the Examiner as failing to teach the use of a monolithic ejection mechanism. However, the Examiner states it would have been obvious at the time the invention was made to make an integral/monolithic mechanism, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. In addition, the Examiner cites Komatsu et al as teaching a monolithic ejection mechanism 7.

The Examiner thus concludes that at the time the invention was made it would have been obvious to one of ordinary skill in the art to combine the teachings of McHugh et al with those of Komatsu et al.

Independent claims 1 and 14 both specify that the ejector mechanism of the present application is a monolithic ejector mechanism. As acknowledged by the Examiner, McHugh et al. fails to teach a monolithic ejector mechanism. The Applicants respectfully assert that the acknowledged deficiency of McHugh et al. is not overcome by combination with Komatsu et al. or the other references of record. In contrast to the Examiners characterization of Komatsu et al., Applicants respectfully maintain that **each of the prior art references, including Komatsu et al., teaches the use of multiple parts to form an ejection mechanism for ejecting or extracting the card.**

In Komatsu et al., the cam 7 does not comprise the entire ejection mechanism.

A full and complete reading of Komatsu et al. shows that cam 7 must be combined with pins 71 and 81 to enable ejection of a card. This is in contrast to the monolithic ejection mechanism of the present application, in which no other components, such as pivot pins, rivets, etc., are required to enable ejection of a card from the header connector apparatus.

The Examiner has also stated that it would have been obvious at the time the invention was made to make an integral/monolithic ejector mechanism, the motivation being a reduction in the number of independent parts. However, the prior art teaches away from the monolithic ejector mechanism of the present invention by consistently teaching the use of ejector mechanisms which comprise assemblies having a plurality of parts. In addition, the plurality of parts that comprise the prior art ejector mechanisms are parts that move, slide, pivot, rotate, etc., relative to each other. Making the parts as a monolithic structure (as suggested by the Examiner) would render the assembly inoperable by eliminating any relative movement of the parts.

Accordingly, for the reasons provided above, it is respectfully submitted that independent claims 1 and 14 are not obvious in view of McHugh et al., either alone or in combination with Komatsu et al, or other references of record. Therefore, Applicants respectfully request withdrawal of the rejection of independent claims 1 and 14 under 35 U.S.C. § 103(a).

Dependent claims 2-5, 9, 12, 13, 18-21, 24, 25 and 28-29 depend either directly or indirectly from independent claims 1 and 14, which are allowable for the reasons discussed above. Because independent claims 1 and 14 are not obvious in view of the combination of McHugh et al. and Komatsu et al., neither are those claims which depend from independent claims 1 and 14. Accordingly, withdrawal of the rejection of dependent claims 2-5, 9, 12, 13, 18-21, 24, 25 and 28-29 under 35 U.S.C. § 103(a) is respectfully requested.

Claims 6-8, 15-17, 22 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over McHugh et al./Komatsu et al., as applied to claim 1 above, and further in view of Broschard, III, et al. (U.S. Patent No, 5,389,001). The Examiner details the deficiencies of the McHugh et al. /Komatsu et al. combination, and elaborates how Broschard, III, et al. overcomes those deficiencies to make dependent claims 6-8, 15-17,

Amendment and Response under 37 C.F.R. 1.116

Applicant: Samuel C. Ramey et al.

Serial No.: 09/529,032

Filed: April 5, 2000

Docket No.: 57174US006

Title: MODULE HEADER APPARATUS

22 and 23 obvious in view of the combination of McHugh et al., Komatsu et al. and Broschard, III, et al.

As discussed above, neither of independent claims 1 and 14 is obvious in view of the combination of McHugh et al. and Komatsu et al. Dependent claims 6-8, 15-17, 22 and 23 depend, either directly or indirectly, from independent claims 1 and 14, which are in allowable condition for the reasons discussed above. Accordingly, dependent claims 6-8, 15-17, 22 and 23 are also in allowable condition. Therefore, withdrawal of the rejection of claims 6-8, 15-17, 22 and 23 under 35 U.S.C. § 103(a) is respectively requested.

Claims 10, 11, 26 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the McHugh et al./Komatsu et al. combination as applied to claim 1 above, and further in view of Okubo et al. (U.S. Patent No. 5,145,389). The Examiner details the deficiencies of the McHugh et al./Komatsu et al. combination, and further elaborates how Okubo et al. overcomes those deficiencies to make claims 10, 11, 26 and 27 obvious in view of the combination of McHugh et al. and Okubo et al.

As discussed above, neither of independent claims 1 and 14 is obvious in view of the combination of McHugh et al. and Komatsu et al. Dependent claims 10, 11, 26 and 27 depend from independent claims 1 and 14, either directly or indirectly, which are allowable for the reasons discussed above. Accordingly, claims 10, 11, 26 and 27 are also in allowable condition. Therefore, withdrawal of the rejection of claims 10, 11, 26 and 27 under 35 U.S.C. § 103(a) is respectively requested.

CONCLUSION

For at least the reasons set forth above, independent claims 1 and 14, and those claims which depend therefrom, are in allowable condition and notice to that effect is respectfully requested.

Amendment and Response under 37 C.F.R. 1.116

Applicant: Samuel C. Ramey et al.

Serial No.: 09/529,032

Filed: April 5, 2000

Docket No.: 57174US006

Title: MODULE HEADER APPARATUS

The Examiner is invited to contact Applicant's representative at the below-listed telephone number to facilitate prosecution of this application.


Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (512) 231-0531, Facsimile No. (512) 231-0540 or Yen Florczak at Telephone No. (512) 984-4669, Facsimile (512) 984-2020. In addition, all correspondence should continue to be directed to the following address:

Yen Florczak
3M Innovative Properties Company
Office of Intellectual Property Counsel
P.O. Box 33427
St. Paul, MN 55133-3427

Respectfully submitted,
Samuel C. Ramey et al.,
By their attorneys,

DICKE, BILLIG & CZAJA, PLLC
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402
Telephone: (612) 573-2000
Facsimile: (612) 573-2005

Date: Oct 22, 2003
MBM:dmd


Matthew B. McNutt
Reg. No. 39,766

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: **Box AF**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 20th day of October, 2003.

By 
Name: Matthew B. McNutt